

IN THE CLAIMS

Please amend the claims as follows.

For the Examiner's convenience, a list of all claims is included below.

1-23 (Canceled)

24. (Previously Presented) A computer system for dynamically and automatically loading and unloading a software library to and from memory in a computer, said software library including one or more library routines and capable of being referenced by an application or other software module, said computer system comprising:

one or more library structures, each library structure corresponding to a software library, each library structure including a library implementation module containing code for implementing the corresponding software library and a library loader containing entry points corresponding to entry points of the corresponding software library and code for loading and unloading the corresponding library implementation module; and

software to perform operations comprising
determining which libraries are potentially needed during execution
of the application or other software module;

loading into memory a library loader for each potentially needed library, said loading occurring anytime before any library of the potentially needed library is executed by the application or other software module;

loading into memory a library implementation module for a software library, said loading occurring prior to when a library routine of the software library is to be executed by the application or other software module;

executing the loaded library implementation module for the library routine being executed; and

automatically unloading from memory the library implementation module after the execution of the library routine is completed while keeping the library loader in memory until the execution of the application or the other software module is completed, wherein the software library is scheduled to be unloaded automatically without an explicit unload request from the application or other software module.

25. (Previously Presented) The computer system as defined in Claim 24 wherein said loading of a library loader for each potentially needed library occurs either just prior to or contemporaneous with the execution of the application or other software module.

26. (Previously Presented) The computer system as defined in Claim 24 wherein said loading of a library loader for each potentially needed library occurs after execution of the application or other software module begins but before any library routine of the potentially needed library is executed by the application or other software module.

27. (Previously Presented) A computer system for dynamically and automatically loading and unloading a software library to and from memory in a

computer, said computer library including one or more library routines and capable of being referenced by an application or other software module, said computer system comprising:

one or more library structures, each library structure corresponding to a software library, each library structure including a library implementation module containing code for implementing the corresponding software library and a library loader containing entry points corresponding to entry points of the corresponding software library and code for loading and unloading the corresponding library implementation module; and

software to perform operations comprising

loading into memory a library implementation module for a software library, said loading occurring prior to when a library routine of the software library is to be executed by the application or other software module, said loading comprising

determining whether the library implementation module is in memory;

if the library implementation module is not in memory, then loading the library implementation module; and

if the library implementation module is in memory and scheduled to be unloaded from memory, then canceling the scheduled unloading of the library implementation module;

executing the loaded library implementation module for the library routine being executed; and

automatically scheduling the unloading of the library implementation module after the execution of the library routine is completed,

while keeping the library loader in memory until completion of the execution application or the other software module; and

unless the scheduled unload has been cancelled, automatically unloading the library implementation module as scheduled, wherein the software library is scheduled for unload and unloaded automatically without an explicit unload request from the application or other software module.

28. (Original) The computer system as defined in Claim 27 wherein said loading of a library loader for each potentially needed library occurs either just prior to or contemporaneous with the execution of the application or other software module.

29. (Previously Presented) The computer system as defined in Claim 27 wherein said loading of a library loader for each potentially needed library occurs after execution of the application or other software module begins but before any library routine of the potentially needed library is executed by the application or other software module.

30. (Previously Presented) The computer system as defined in Claim 27 wherein said scheduling the unloading of the library implementation module includes delaying the unloading of the library for a specified delay and unloading the library implementation module upon completion of the delay.

31. (Previously Presented) The computer system as defined in Claim 30 wherein said specified delay is a time delay.

32. (Original) The computer system as defined in Claim 31 wherein time delay is fixed.

33. (Original) The computer system as defined in Claim 31 wherein said time delay is variable.

34. (Previously Presented) The computer system as defined in Claim 30 wherein said specified delay is based on system resources.

35. (Previously Presented) The computer system as defined in Claim 27 wherein said scheduling the unloading of the library implementation module comprises

setting an associated criteria;
unsetting an associated criteria of said scheduled unloading is cancelled; and
resetting the associated criteria of the library implementation module is again scheduled for unloading.

36. (Previously Presented) A computer system for dynamically and automatically loading and unloading a software library to and from memory in a computer, said software library capable of being referenced by an application or other software module, said computer system comprising:

one or more library structures, each library structure corresponding to a software library, each library structure including a library implementation module containing code for implementing the corresponding software library and a library

loader containing entry points corresponding to entry points of the corresponding software library and code for loading and unloading the corresponding library implementation module; and

software to perform operations comprising

loading a software library into memory; and

automatically unloading said software library from memory after completion of execution of said library routine, while keeping the library loader in memory until completion of the execution of the application or the other software module, wherein the software library is scheduled to be unloaded automatically without an explicit unload request from the application or other software module.

37. (Previously Presented) The computer system of Claim 36 wherein said unloading of said software library comprises

scheduling the unloading of the library implementation module;

setting an associated criteria;

checking whether said set associated criteria has been met; and

unloading the library implementation module if after said associated criteria has been met, said library implementation module is not being referenced by an application or other software module.

38-51 (Canceled)

52. (Previously Presented) A computer system for dynamically loading a software library into memory in a computer, said software capable of being used by an application or other software module, said computer system comprising:

one or more library structures, each library structure corresponding to a software library, each library structure including a library implementation module containing code for implementing the corresponding software library and a library loader containing entry points corresponding to entry points of the corresponding software library and code for loading and unloading the corresponding library implementation module; and

an operating system or other software to perform operations comprising

loading into memory a library implementation module for a software library containing a library routine, said loading occurring just prior to when said library routine is to be executed by the application or other software module, said loading comprising

determining whether the library implementation module is in memory;

if the library implementation module is not in memory, then loading the library implementation module; and

if the library implementation module is in memory and scheduled to be unloaded from memory, then canceling the scheduled unloading of the library implementation module;

executing the loaded library implementation module for the library routine being executed; and

scheduling the unloading of the library implementation module after the execution of the library routine is completed, while keeping the library loader in memory until completion of the execution application or the other software module, wherein said scheduling the unloading of the library implementation module includes setting a time delay and unloading the library implementation module if

after said time delay has been met, said library implementation module is into in use.

53. (Previously Presented) The computer system as defined in Claim 52 wherein said time delay is fixed.

54. (Previously Presented) The computer system as defined in Claim 52 wherein said time delay is variable.

55. (Previously Presented) A computer system for dynamically loading a software library into memory in a computer, said software capable of being used by an application or other software module, said computer system comprising:

one or more library structures, each library structure corresponding to a software library, each library structure including a library implementation module containing code for implementing the corresponding software library and a library loader containing entry points corresponding to entry points of the corresponding software library and code for loading and unloading the corresponding library implementation module; and

an operating system or other software to perform operations comprising loading into memory a library implementation module for a software library containing a library routine, said loading occurring just prior to when said library routine is to be executed by the application or other software module, said loading comprising

determining whether the library implementation module is in memory;

if the library implementation module is not in memory, then loading the library implementation module; and

if the library implementation module is in memory and scheduled to be unloaded from memory, then canceling the scheduled unloading of the library implementation module;

executing the loaded library implementation module for the library routine being executed; and

scheduling the unloading of the library implementation module after the execution of the library routine is completed, while keeping the library loader in memory until completion of the execution application or the other software module, wherein said scheduling the unloading of the library implementation module includes setting an associated criteria based on system resources and unloading the library implementation module if after said associated criteria has been met, said library implementation module is not in use.

56. (Previously Presented) A computer system for dynamically loading a software library into memory in a computer, said software capable of being used by an application or other software module, said computer system comprising:

one or more library structures, each library structure corresponding to a software library, each library structure including a library implementation module containing code for implementing the corresponding software library and a library loader containing entry points corresponding to entry points of the corresponding software library and code for loading and unloading the corresponding library implementation module; and

an operating system or other software to perform operations comprising

loading into memory a library implementation module for a software library containing a library routine, said loading occurring just prior to when said library routine is to be executed by the application or other software module, said loading comprising

determining whether the library implementation module is in memory;

if the library implementation module is not in memory, then loading the library implementation module; and

if the library implementation module is in memory and scheduled to be unloaded from memory, then canceling the scheduled unloading of the library implementation module;

executing the loaded library implementation module for the library routine being executed; and

scheduling the unloading of the library implementation module after the execution of the library routine is completed, while keeping the library loader in memory until completion of the execution application or the other software module, wherein said scheduling the unloading of the library implementation module includes setting an associated criteria, unsetting an associated criteria if said scheduled unloading is cancelled, and resetting the associated criteria if the library implementation modules is again scheduled for unloading.

57. (Previously Presented) A computer system for dynamically loading a software library into memory in a computer, said software capable of being used by an application or other software module, said computer system comprising:

one or more library structures, each library structure corresponding to a software library, each library structure including a library implementation module containing code for implementing the corresponding software library and a library loader containing entry points corresponding to entry points of the corresponding software library and code for loading and unloading the corresponding library implementation module; and

an operating system or other software to perform operations comprising loading into memory a library implementation module for a software library containing a library routine, said loading occurring just prior to when said library routine is to be executed by the application or other software module, said loading comprising

determining whether the library implementation module is in memory;

if the library implementation module is not in memory, then loading the library implementation module; and

if the library implementation module is in memory, then canceling the scheduled unloading of the library implementation module;

executing the loaded library implementation module for the library routine being executed; and

scheduling the unloading of the library implementation module after the execution of the library routine is completed, while keeping the library loader in memory until completion of the execution application or the other software module, wherein said scheduling the unloading of the library implementation module includes setting an associated criteria, unsetting an associated criteria if said

scheduled unloading is cancelled, and resetting the associated criteria if the library implementation modules is again scheduled for unloading.

58. (Previously Presented) A computer system for dynamically loading a software library into memory in a computer, said software capable of being used by an application or other software module, said computer system comprising:

one or more library structures, each library structure corresponding to a software library, each library structure including a library implementation module containing code for implementing the corresponding software library and a library loader containing entry points corresponding to entry points of the corresponding software library and code for loading and unloading the corresponding library implementation module; and

an operating system or other software to perform operations comprising loading a software library into memory just prior to or contemporaneous with execution of a library routine in said software library; and

unloading said software library from memory after completion of execution of said library routine, wherein said unloading of said software library includes scheduling the unloading of the library implementation module, while keeping the library loader in memory until completion of the execution application or the other software module, setting an associated criteria, checking whether said set associated criteria has been met, and unloading the library implementation module if after said associated criteria as been met, said library implementation module is not in use.

59. (Previously Presented) A computer-readable medium having stored thereon instructions for causing a computer to perform operations comprising

determining one or more software libraries which are potentially needed

during execution of an application or other software module;

loading into memory a library loader for each potentially needed library,

said loading occurring after execution of the application or other software module

begins but before any library routine of the potentially needed library is executed by

the application or other software module;

loading into memory a library implementation module for a software library

containing a library routine, said loading occurring just prior to when said library

routine is to be executed by the application or other software module;

executing the loaded library implementation module for the library routine

being executed; and

automatically unloading from memory the library implementation module

after the execution of the library routine is completed, while keeping the library

loader in memory until completion of the application or the other software module,

wherein the library implementation module is scheduled to be unloaded from

memory.

60. (Previously Presented) A computer-readable medium having stored thereon

instructions for causing a computer to perform operations comprising

determining one or more software libraries which are potentially needed

during execution of an application or other software module;

loading into memory a library loader for each potentially needed library, said loading occurring anytime before any library of the potentially needed library is executed by the application or other software module;

loading into memory a library implementation module for a software library containing a library routine, said loading occurring just prior to when said library routine is to be executed by the application or other software module, said loading including determining whether the library implementation modules is in memory, if the library implementation module is not in memory, then loading the library implementation module, and if the library implementation module is in memory and scheduled to be unloaded from memory, then canceling the scheduled unloading of the library implementation module;

executing the loaded library implementation module for the library routine being executed; and

scheduling the unloading of the library implementation module after the execution of the library routine is completed, while keeping the library loader in memory until completion of the execution application or the other software module, wherein said scheduling the unloading of the library implementation module includes setting a time delay and unloading the library implementation module if after said time delay has been met, said library implementation module is not in use.

61. (Previously Presented) The computer-readable medium as defined in Claim 60 wherein said time delay is fixed.

62. (Previously Presented) The computer-readable medium as defined in Claim 60 wherein said time delay is variable.

63. (Currently Amended) A computer system for automatic unloading of a dynamically-loaded software library from memory in a computer, said software library including one or more library routines and capable of being referenced or otherwise invoked by an application or other software module, said computer system comprising:

one or more libraries, each software library containing one or more library routines, each software library having a library loader and a library implementation module, the library loader specifying entry points corresponding to entry points in the software library and the library implementation module containing computer code to implement the software library, the library loader handling unloading the software library;

means for loading into memory a library loader for each potentially needed library, a library loader for a library being loaded by the time the application or other software module executes a routine in that library;

means for loading into memory a library implementation module for a software library, said loading occurring prior to when a library routine of the software library is executed by the application or other software module, said loading handled by the library loader for the software library;

means for determining whether any application or other software module is referencing the software library; and

means for automatically automatically unloading the software library from memory after the execution of the library routine is completed, while keeping the library loader in memory until completion of the execution application or the other software module if it is determined that the software library is not being referenced

by any application or other software module, wherein the software library is scheduled to be unloaded automatically without an explicit unload request from the application or other software module.

64. (Previously Presented) A computer system for automatic unloading of a dynamically-loaded software library from memory in a computer, said software library including one or more library routines and capable of being referenced or otherwise invoked by an application or other software module, said computer system comprising:

one or more libraries, wherein each of the one or more libraries includes a library implementation module containing code for implementing the corresponding software library and a library loader containing entry points corresponding to entry points of the corresponding software library and code for loading and unloading the corresponding library implementation module, the library implementation module containing one or more library routines

means for determining whether any application or other software module is referencing the software library; and

means for automatically unloading the software library from memory after the execution of the library routine is completed, while keeping the library loader in memory until completion of the execution application or the other software module if it is determined that the software library is not being referenced by any application or other software module, wherein the software library is scheduled to be unloaded automatically without an explicit unload request from the application or other software module, wherein said means for automatically unloading the software library comprises means for delaying the unloading of the software library

for a specified delay and means for unloading the software library upon completion of the delay.

65. (Previously Presented) The computer system as defined in Claim 64, wherein said means for automatically unloading the software library further comprises:

means for determining at completion of the delay whether the software library is being referenced by an application or other software module; and
means for unloading the software module only if the software library is not being referenced by an application or other software module;

66. (Previously Presented) The computer system as defined in Claim 64 further comprising:

when an application or other software module references or otherwise invokes a routine in a software library, means for determining whether the software library is subject to a delayed unloading; and
if the software library is subject to a delayed unloading means for canceling the delayed unloading.

67. (Previously Presented) The computer system as defined in Claim 64 wherein said specified delay is a time-based delay.

68. (Currently Amended) A computer system for automatic unloading of a dynamically-loaded software library from memory in a computer, said software library including one or more library routines and capable of being referenced or

otherwise invoked by an application or other software module, said computer system comprising:

a processor;

a memory;

a disk;

one or more software libraries stored on said disk, wherein each of the one or more software libraries includes a library implementation module containing a code for implementing the corresponding software library and a library loader containing entry points corresponding to entry points of the corresponding software library and the code for loading and unloading the corresponding library implementation module, the library implementation module containing one or more library routines;

software operated on by said processor to perform operations comprising:

determining whether any application or other software module is referencing the software library; and

automatically unloading the library implementation module from memory after the execution of the library routine is completed, while keeping the library loader in memory until completion of the execution application or the other software module if it is determined that the software library is not being referenced by any application or other software module, wherein the software library is scheduled to be unloaded automatically without an explicit unload request from the application or other software module.

69. (Previously Presented) The computer system as defined in Claim 68 wherein said software library is comprised of a library loader and a library

implementation module, the library loader specifying entry points corresponding to entry points in the software library and the library implementation module containing computer code to implement the software library, the library loader handling unloading the software library, said software performing operations comprising:

loading into memory a library loader for each potentially needed library, a library loader for a library being loaded by the time the application or other software module executes a routine in that library; and

loading into memory a library implementation module for a software library, said loading occurring just prior to when a library routine of the software library is executed by the application or other software module, said loading handled by the library loader for the software library.

70. (Previously Presented) The computer system as defined in claim 68 wherein said automatically unloading the software library comprises delaying the unloading of the software library for a specified delay and unloading the software library upon completion of the delay.

71. (Previously Presented) The computer system as defined in claim 68, said automatically unloading the software library further comprises determining at completion of the delay whether the software library is being referenced by an application or other software module; and unloading the software module only if the software library is not being referenced by an application or other software module;

72. (Previously Presented) The computer system of claim 70 further comprising
when an application or other software module references or otherwise
invokes a routine in a software library, determining whether the software library is
subject to a delayed unloading; and
if the software library is subject to a delayed unloading canceling the
delayed unloading.

73. (Previously Presented) The computer system as defined in Claim 70
wherein said specified delay is a time-based delay.

74. (Previously Presented) A computer-readable medium having stored thereon
instructions for causing a computer to perform operations comprising:
loading a software library into memory, wherein the software library
comprises a library implementation module containing code for implementing the
corresponding software library and a library loader containing entry points
corresponding to entry points of the corresponding software library and code for
loading and unloading the corresponding library implementation module; and
automatically unloading said library implementation module from memory
after completion of execution of said library routine, while keeping the library
loader in memory until completion of the execution application or the other
software module, wherein the automatically unloading includes delaying the
unloading for a delay period and canceling a delayed unloading of a software
library if a library routine of the software library is referenced by an application or
other software module during the delay period.

75. (Previously Presented) A computer system for dynamically loading a software library into memory in a computer, said software capable of being used by an application or other software module, said computer system comprising:

one or more library structures, each library structure corresponding to a software library, each library structure including a library implementation module containing code for implementing the corresponding software library and a library loader containing entry points corresponding to entry points of the corresponding software library and code for loading and unloading the corresponding library implementation module; and

an operating system or other software operations comprising
determining which libraries are potentially needed during execution
of the application or other software module;

loading into memory a library loader for each potentially needed library, said loading occurring after execution of the application or other software module begins but before any library routine of the potentially needed library is executed by the application or other software module;

loading into memory a library implementation module for a software library containing a library routine, said for a software library containing a library routine is to be executed by the application or other software module;

executing the loaded library implementation module for the library routine being executed; and

unloading from memory the library implementation module after the execution of the library routine is completed, while keeping the library loader in memory until the execution of the application or the other software module is

completed, wherein the library implementation module is scheduled to be unloaded automatically.

76. (New) The computer system of claim 24, wherein the software library is scheduled to be unloaded automatically without using a counting.

77. (New) The computer system of claim 27, wherein the software library is scheduled to be unloaded automatically without using a counting.

78. (New) The computer system of claim 36, wherein the software library is scheduled to be unloaded automatically without using a counting.

79. (New) The computer system of claim 55, wherein said scheduling the unloading of the library implementation module is performed without using a counting.

80. (New) The computer system of claim 56, wherein said scheduling the unloading of the library implementation module is performed without using a counting.

81. (New) The computer system of claim 57, wherein said scheduling the unloading of the library implementation module is performed without using a counting.

82. (New) The computer of claim 58, wherein said scheduling the unloading of the library implementation module is performed without using a counting.

83. (New) The computer system of claim 59, wherein said scheduling the unloading of the library implementation module is performed without using a counting.

84.(New) The computer-readable medium of claim 60, wherein said scheduling the unloading of the library implementation module is performed without using a counting.

85. (New) The computer system of claim 68, wherein said scheduling the unloading of the library implementation module is performed without using a counting.

86. (New) The computer system of claim 75, wherein said scheduling the unloading of the library implementation module is performed without using a counting.